

Current Geotechnical Projects

Evaluation of Liquefaction Hazards



The recent Nisqually earthquake has awakened the need for a further understanding of the hazards associated with liquefiable soils. This project will characterize specific soil types with respect to their potential for liquefaction. The goal is to be able to utilize all of the strength of a soil, even a liquefied soil, in order to minimize construction costs.

Infiltration Pond Design



Infiltration ponds are designed to retain runoff from our highway facilities and slowly let that water seep into the ground. The objective is to provide a filtering mechanism that will prevent any contamination of the underlying aquifers. This project will improve the technology for predicting the infiltration rate of soils.

Wiremesh/Cablemesh Slope Protection



Wiremesh and cablemesh slope protection has been utilized by WSDOT for many years to control rockfall. The initial design and specifications were developed by WSDOT using empirical methods in the late 1950's for slopes that were generally less than 75 feet in height. This project is examining these systems using finite element analysis to develop new guidelines that will be applicable for higher slopes and slopes which receive snow loads.

Full-Scale Reinforced Wall Model Tests and Numerical Modeling



The best quality data available to understand the behavior of reinforced soil walls at working stresses and at failure is being produced with this project. This data is being generated from a series of full-scale test walls being built and tested at the Royal Military College of Canada. A simplified design method has been produced is undergoing continued refinement as more walls are built and tested.